

SWBAT: measure the speed of light

Jan 4-7:20 AM

Concept Sheet

~ 7 rows when we're done...

We'll fill in two terms (rows) today.

Concept	Meaning	Sym-bol	Units	Picture
<div>PITCH</div> FREQUENCY	HOW MANY PER UNIT OF TIME $FREQ = \frac{\#}{TIME}$	f $f = \frac{1}{T}$	hertz $Hz = \frac{1}{sec}$	
PERIOD	HOW MUCH TIME FOR ONE. PERIOD = $\frac{TIME}{\#}$	T $T = \frac{1}{f}$	seconds sec.	
TRANSVERSE	WHEN THE MEDIUM VIBRATES ACROSS THE DIRECTION THE WAVE TRAVELS.			
LONGITUDINAL	WHEN THE MEDIUM VIBRATES ALONG THE DIRECTION THE WAVE TRAVELS.			
<div>INTENSITY</div> <div>LOUD</div> AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters m	
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	λ	meters m	
WAVESPEED	DISTANCE OF A WAVE TIME OF A WAVE $V = \frac{\lambda}{T}$	V $V = \lambda \cdot f$	meters second m/s	

Feb 18-6:50 AM

Welcome!!!

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SECA Physics
Friday 22 May 2015

- * Pick up:
- worksheet



Opening Question:

What are the 4 things that can happen with light?

REFLECT - BOUNCE OFF

ABSORB - TAKE IN

EMIT - GIVES OFF

TRANSMIT - SEND THRU.

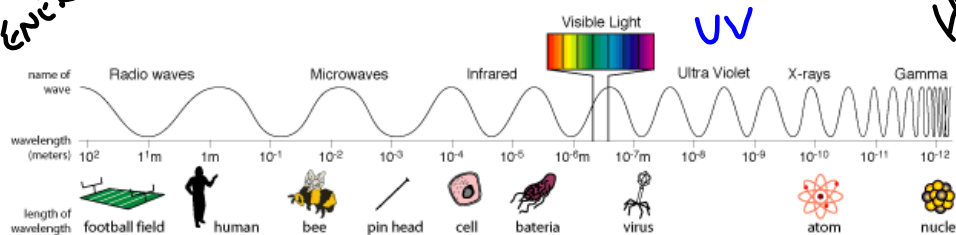
Centering

Sep 7-7:04 AM

Is there light we can't see? YES!

LOWER ENERGY

HIGH ENERGY



May 16-7:50 AM

Measuring the speed of light...

* What does $v = f \cdot \lambda$ mean?

Wave speed = Frequency \times Wavelength

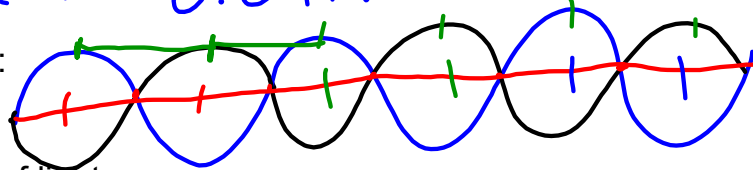
* Frequency of our microwave?

$$2.45 \text{ GHz} = 2,450,000,000 \text{ Hz}$$

* Distance between hot spots?

$$7.1 \text{ cm} = 0.071 \text{ m} \quad \times 2 = \text{WAVELENGTH}$$

* Picture:



* Speed of light =

$$v = (2.45 \times 10^9) \times (0.12 \text{ m})$$

$$= 294,000,000 \text{ m/s}$$

May 11-7:32 AM

What can happen with light?

Emit: GIVES OFF

1. Think on your own ~30-60 sec
2. Discuss with people near you ~2 min
3. Share with the class...

Absorb: TAKES IN

Reflect: BOUNCES OFF

Transmit: (demo) SEND ACROSS / THROUGH

→ ABSORB, EMIT, ABSORB, EMIT

May 23-7:42 AM

Outrageous Acts of Science

A show about viral videos and the science that makes them possible...

"Red Hot Rim" Dukes of Havoc #18

1. Just watch
2. Read the questions
3. Watch again
4. Discuss
5. Watch a last time to catch anything you might have missed



"Shotgun Rainbow" Homemade Heroes #19

Oct 4-7:27 AM

Daily 3 Questions

CP: Enjoy your long weekend!

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1) What was the **distance** between hot spots in our marshmallows?

6 cm

2) What was the **frequency** emitted by the microwave?

$2.45 \text{ GHz} = 2,450,000,000 \text{ Hz}$

3) Is there light we can't see?

YES! UV, INFRARED, MICROWAVES...

Apr 25-7:25 AM